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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,676	12/12/2001	Matthew S. Ryskoski	2000.083300/TT4500	4732

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EXAMINER

PALADINI, ALBERT WILLIAM

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 06/27/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/021,676	Applicant(s) RYSKOSKI, MATTHEW S.	
	Examiner Albert W Paladini	Art Unit 2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2003.
- 2a) ☒ This action is FINAL.
- 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some * c) ☐ None of:
 - 1. ☐ Certified copies of the priority documents have been received.
 - 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. Applicant's arguments filed on 6/5/03 have been fully considered and have resulted in withdrawing the 35 USC 112 rejections, but they are not persuasive with respect to the art rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nulman (6456894).

This rejection is made to the extent that the claims are understood. Since, as demonstrated in paragraphs 1-5, an invention was not clearly described in the specification or the claim recitation, this rejection addresses the gleaned goals of the invention.

In figure 3, Nulman discloses a method for scheduling production flow, where the manufacturing environment block monitors the manufactured items, and the tools used to produce these items. The data is fed to the SPC (statistical process control block) 112 flags out of control situations due to either item health or tool health. After being processed by the analysis block 116, the MES block schedules the manufacturing items for processing based on the item health metrics and the tool health metrics.

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Nulman states on lines 18-26 in paragraph 7 "The MES environment then determines whether the process of manufacturing environment 110 is within or outside the SPC control limits. A decision making function in MES environment 118 can then be invoked to decide whether or not to initiate intervention in manufacturing environment 110. Such intervention can include aborting the run, adjusting parameters such as chamber pressure, scheduling additional wafers for processing or scheduling maintenance activities." The correction requires changing the manufacturing parameters if the problem is an item health problem, or maintenance if the problem is a tool health problem. Nulman does not utilize "grade" and "yield", but as described in paragraphs 1-5, "grade" is not understood.

"Yield" is a measure of the percent of good products emerging a production line. Statistical process control charts set up control limits, so that the system flags an out of control situation. An out of control situation occurs when too many manufactured items are not within their design control limits. It would have been obvious to one of ordinary skill in the art that the detection of an out of control situation by a statistical process control chart indicates a reduction in yield, so that an SPC is a measure of yield.

Response to Arguments

The arguments with respect to the 35 USC 112 rejections were withdrawn as a result of the Applicant's arguments on pages 1-8 of the response, which convinced the examiner that the specification supported the claims when interpreted as broadly as possible.

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With respect to the 35 USC 103 rejection, the Applicant states on page 9 of the response "Accordingly, Nulman does not teach or suggest 'scheduling the manufacturing items for processing in the tools based on the item health metrics in view of the tool health metrics.'"

Nulman states on lines 45-53 in column 3 "Effective inventory control of a wafer fab also requires a low incidence of bottlenecks or interruptions due to unscheduled down times which can for example be caused by unscheduled maintenance, interruptions resulting from processing parameters which are outside their specified limits, unavailability of required materials such as a process gas, unavailability of necessary maintenance replacement parts, unavailability of a processing tool such as a chamber, or electrical power interruptions."

Nulman states on lines 17-22 in column 19 "SPC techniques, such as those described in connection with FIGS. 3-9 can also be used to identify processing, product or quality problems requiring repair or maintenance action of a wafer fab tool. Statistical information regarding the need for spare parts, based on these SPC techniques can be provided by the MES environment to maintenance parts 1254 and maintenance activities 1256 of chamber 12, shown in FIG. 16. This SPC derived information is then an added component of the spare parts requirements which is provided to the spare parts monitor environment.."

Nulman states on lines 35-44 in column 7, "SPCIF 100 schematically illustrated in FIG. 3 provides SPC which is integrated with manufacturing. This integration results in real time monitoring of process control and/or product quality and provides real time process intervention as soon as certain preselected process or product parameters are outside the control limits. It also facilitates more effective scheduling of tool availability, materials inventory and real time knowledge as well as scheduling capability for facilities such as electrical power requirements in the manufacturing process."

Thus, Nulman utilizes the health metrics of the tools in terms of the tool availability and maintenance down time, and the health of the item as determined by the Statistical Process Control process monitoring in the scheduling process.

Final Rejection

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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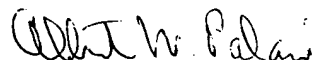
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (703) 308-2005. The examiner can normally be reached from 7:30 to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (703) 308-0538. The official fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239, and after final faxes should be directed to (703) 746-7238.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

June 25, 2003


Albert W. Paladini
Primary Examiner
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